U.S. Environmental Protection Agency - Region III Superfund Program

RECORD OF DECISION OPERABLE UNIT TWO

AVTEX FIBERS SITE FRONT ROYAL, VIRGINIA

SEPTEMBER 1990

RECORD OF DECISION

AVTEX FIBERS, INC.

I. DECLARATION

Site Name and Location

Avtex Fibers Site, Operable Unit Two (OU2) Front Royal, Virginia

Statement of Basis and Purpose

This decision document presents the selected remedial action for drummed wastes, PCB-contaminated soils, the acid reclaim facility and site security, control, maintenance, and health and safety at the Avtex Fibers Site in Front Royal, Virginia, which was chosen in accordance with CERCLA, as amended by SARA, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for this site.

The Commonwealth of Virginia concurs with the selected remedy.

Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision, may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Selected Remedy

This remedy is Operable Unit Two (OU 2) in the remediation process of the Avtex Fibers-Front Royal site. This remedy addresses problems and risks associated with drummed wastes, PCB-contaminated soils, the acid reclaim facility, and site security, control, maintenance, and health and safety. The objective of this remedy is to remove hazardous substances in drums, from contaminated soils, from the facility structure and associated equipment, and from other safety hazards and obstacles to future site work. While the remedy does address some of the principal threats at the site, future actions will involve continued study and possible remediation of additional site structures, ground water, surface water, a sewer system, and waste disposal areas associated with the site. Remedial alternatives which address other areas of concern will be delineated in future Records of Decision.

The major components of the selected remedy include:

* Identification, transportation and disposal of the 2,879 drums currently onsite. Upon identification of drum contents, liquid hazardous wastes will be treated at an offsite

treatment facility. The contractor procured for this action will be responsible for the ultimate disposal and/or destruction of the empty drums. Options for empty drums 910038

likely include decontamination and recycling, crushing and disposal in a secure RCRA landfill, or incineration. Drums which contain non-hazardous substances will be left onsite and available for liquidation by the corporate trustee upon EPA's approval.

- Excavation, transportation, and disposal of an estimated 5,000 cubic yards of PCB-contaminated soils to an offsite approved chemical waste landfill. Soils contaminated with PCBs in excess of 10 parts per million will be excavated for disposal. Following removal of soils, the excavated area will be resampled to confirm that the cleanup level has been met. The excavated area will be restored as necessary which may include grading and/or seeding.
- Dismantling and demolition of the unstable acid reclaim facility. Both the building and equipment within the building, to the extent practicable and necessary, will be decontaminated using best management practices. Decontaminated usable equipment from within the building may be liquidated for financial purposes by the corporate bankruptcy trustee upon approval by EPA. The corporate trustee may also sell other facility components as scrap or recyclable material upon approval by EPA. Decontaminated building rubble, debris, and any unsold or recycled facility components will be left onsite. A final determination for materials left onsite will be made in a future Record of Decision.
- * Continued site security, control, maintenance, and health and safety measures to ensure protection of human health and the environment.

Statutory Determinations

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies, to the maximum extent practicable for this Operable Unit. There are 5,000 cubic yards of PCB-contaminated soils present onsite surrounding the polyester loading dock of the plant which require remediation. Because only a small volume of this PCB contaminated soil poses a principal threat to public health, welfare or the environment, treatment of the PCB-contaminated soil is not appropriate for this situation. In order to streamline the cleanup process, EPA believes that excavation and offsite transportation and disposal of the PCB-contaminated soil is the appropriate remedial response action to address the problem.

Because this remedy will likely restrict future use of certain areas of the site to industrial operations (due to PCB-contaminated soil remaining onsite above levels for residential use), a review will be conducted within five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

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Edwin B. Erickson

Regional Administrator

Region III

SEP 2 8 1990

Date

II. DECISION SUMMARY

Site Name, Location, and Description

The Avtex Fibers, Inc. Site (Avtex) is a former synthetic fibers manufacturing facility that is located at 1169 Kendrick Lane, in Front Royal, Virginia, as shown in Figure 1. Situated along the east bank of the Shenandoah River, the facility occupies approximately 440 acres, 60 of which are under roof.

Front Royal is located in northwest Virginia along the boundary of the Valley and Ridge and Blue Ridge physiographic provinces. The facility is bounded to the northwest and west by the South Fork of the Shenandoah River and to the south, east and northwest by residential areas. Approximately 1,300 people live within one mile of the site. At the Avtex Fibers site, there are viscose basins located on a relatively flat terrace which is at an elevation of approximately 510 feet above mean sea level (MSL). Immediately west of the viscose basins, toward the river, the ground surface drops abruptly to approximately 490 feet above MSL. The elevation change establishes the limits of the 100-year floodplain for the Shenandoah River. The floodplain region is flat for approximately 1,000 feet. At the edge of the floodplain region the grade descends approximately 20 feet to the river. The normal pool level of the river is at 470 feet above MSL. The Shenandoah River is the only major natural surface water body adjacent to the facility and is designated as a Class IV and scenic river by the Virginia State Water Control Board (SWCB). The Shenandoah River is used for recreational fishing. It also serves as a source of drinking water 23 miles downstream of the facility for the town of Berryville.

The Avtex facility is located on river alluvial deposits of sand, silt, clay, and meta-igneous cobbles. These surficial deposits are approximately 10 to 20 feet thick, as recorded from the installation of onsite monitoring wells. The river deposits are underlain by the Martinsburg Formation. Locally, the formation consists of massive and fractured greenish-gray shale with occasional void spaces and stringers of silty sandstone. In general, the attitude of the formation beds is nearly vertical with geologic strike trending northeast-southwest.

The ground water flow system is controlled by the bedding-plane fractures, parallel to the structural strike of the shale bedrock. The general direction of ground water through the fractured shale is from the Avtex facility toward the southwest and the Shenandoah River. The ground water migrating from the vicinity of the viscose basins pushes past the Shenandoah River at depth and migrates beneath Rivermont Acres, a subdivision located on the west bank of the Shenandoah River.

Site History and Enforcement Activities

Operations at the Avtex Fibers site began in 1940, when American Viscose first opened a rayon production plant. Subsequently, the site was sold to FMC Corporation in 1963, and to Avtex Fibers, Inc., in 1976. Rayon fibers have been in constant production at the site since its opening. Polyester was manufactured from 1970 to 1977 and polypropylene production occurred from 1985 until the plant's closing on November 11, 1989.

Rayon fiber is manufactured from wood pulp by a series of chemical reactions and physical operations. This process generated a number of wastes that were treated in an onsite wastewater treatment system or disposed of onsite. Land disposal took place in both unlined surface impoundments and landfills. The two major byproducts generated through the rayon process were viscose waste and zinc hydroxide sludge. The viscose waste was disposed in 11 viscose basins (numbered 1-11) until 1983 when wastewater treatment of this waste stream was initiated. Waste sludge containing zinc was disposed of in six unlined sulfate basins (numbered 1-4, 4E and 5) which cover approximately 85 acres. The sulfate basins drain downhill into an unlined surface impoundment known as the "emergency lagoon." Additionally, there are four unlined fly ash basins (numbered 1-3 and 6) and one fly ash stock pile which were used for the disposal of fly ash and boiler house solids generated from operations at the facility. A solid waste landfill was built over viscose basins 4, 5 and 6, and was subsequently closed as required by the SWCB. Since late 1983, solid wastes were placed in a Virginia permitted solid waste landfill. All waste disposal structures are identified and located on Figure 1.

The main plant building was constructed in 1937 for the American Viscose Company. Inside the building there are four major corridors which run perpendicular to four points of the compass: north, south, east, and west. The physical layout of the plant is organized around the main corridors. The rayon production lines run from south to north adjacent to either side of the east corridor. The caustic soda, acid reclamation, zinc reclamation, and water softening areas run adjacent to the west corridor. Along the south corridor the wood, machine, and pipe shops as well as the plant engineering offices are located. South of the main building are the coal storage field, the power plant, laboratory, and the plant maintenance shops. Figure 2 shows a layout of the plant's manufacturing facility.

A very extensive underground sewer system traverses the Avtex property originating from the plant building. Plant sewers were used to transfer wastes and wastewater from the manufacturing plant to the disposal impoundments and wastewater treatment plant. The sewer system consists of an acid sewer, base sewer, bleach sewer, boiler blowdown sewer, laundry sewer, laboratory sewer, rainwater sewer and viscose sewer which are constructed of terra cotta and have handled many incompatible wastes. It is anticipated that the structural integrity of the sewer system has been compromised and may be a source of subsurface soil and ground water contamination.

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In 1982, carbon disulfide, a constituent of the viscose waste, was identified in ground water samples from residential wells (Rivermont Acres) located across the Shenandoah River from the Avtex facility. As a result of this discovery, the Virginia State Water Control Board (SWCB) requested that Avtex perform a ground water investigation. In February 1983, Avtex retained Geraghty and Miller, Inc. to perform the required study.

As a result of the initial field investigation, Avtex implemented interim remedial measures in 1983 and 1984 to address the identified contamination. The interim remedial measures included the purchase by Avtex of 23 Rivermont Acres properties whose domestic wells were affected by the ground water contamination. For one permanent resident and the three seasonal residents, water being supplied was financed by Avtex. FMC Corporation has assumed this responsibility following the Avtex closing. Avtex also initiated a ground water pump and treat program for purposes of contaminant recovery and containment.

In October 1984, the Avtex Fibers site was proposed for inclusion on the National Priorities List (NPL), a list of hazardous waste sites across the country in need of remedial evaluation and potential response. The site was finalized on the NPL on June 1, 1986. In August 1986, Avtex Fibers and the Environmental Protection Agency (EPA) entered into an Administrative Consent Order to conduct a Remedial Investigation and Feasibility (RI/FS) at the site. The purpose of this study was to investigate the magnitude and extent of ground water contamination which resulted from the viscose waste disposal. The Consent Order was amended in January 1988 to include FMC Corporation as a respondent. The RI/FS reports were released to the public on August 27, 1988. The principal findings of the first RI/FS were that viscose basins 9, 10 and 11 are a source of ground water contamination with respect to the elevated levels of carbon disulfide, hydrogen sulfide, arsenic, cadmium and lead. Based on the findings from the RI/FS, a Record of Decision (ROD) was signed on September 30, 1988, requiring dewatering of viscose basins 9, 10, 11 and pump and treat of contaminated ground water. This action is the first operable unit (OU 1) for the site. Following negotiation periods, FMC Corporation and Avtex Fibers were issued an Administrative Order (AO) by the EPA requiring these Potentially Responsible Parties (PRPs) to finance and perform Remedial Design/Remedial Action (RD/RA) to implement the ROD. Both Avtex and FMC agreed to comply with the AO. Avtex subsequently notified EPA of its alleged inability to comply with the AO due to the shutdown of operations and financial viability. The operable unit 1 remedy is currently in the design phase. FMC will perform this RD/RA

Certain areas within the Avtex facility have been contaminated with polychlorinated biphenyls (PCBs) resulting primarily from an explosion of an electrical transformer and from maintenance practices in the polyester drying area. The presence of PCBs on the Avtex site has been confirmed by the Virginia SWCB through its analysis of samples collected on August 28, 1989, and September 1, 1989. PCBs in excess of the Food and Drug Administration (FDA) Tolerance Level of 2.0 parts per million (ppm) were detected in fish tissues collected by the SWCB from the Shenandoah River. As a result, on May 12, 1989, the Virginia Department of Health (VDH) issued an advisory against the consumption of fish from the lower portions of the North and South Fork Shenandoah and the mainstem Shenandoah River from the Front Royal area downstream to the West Virginia State line. The SWCB also confirmed the presence of PCBs in river bank soil and sediment samples and onsite soils.

In September 1989, the Commonwealth of Virginia requested an evaluation of the facility by the EPA Superfund Removal Program. Upon review, the EPA On-Scene Coordinator (OSC) determined that an imminent threat to the health of the workers at the Avtex facility existed from contact with PCB contaminated soils. In addition, an imminent threat to the environment existed from the discharge of PCB contaminated wastewater from the sewer system at the plant to the Shenandoah River. The OSC initiated assessment activities which included: oversight of the Avtex-initiated PCB cleanup and an evaluation of drums, bulk storage vessels and process lines. On October 31, 1989, EPA issued an Administrative Order (AO) which required Avtex to: perform a PCB-contamination study and removal; perform waste identification; segregate and dispose of hazardous substances contained in drums; and determine the potential release of hazardous substances associated with site processes, operations and chemical/waste storage areas.

On November 10, 1989, the Commonwealth of Virginia revoked the Avtex Fibers National Pollutant Discharge Elimination System (NPDES) permit. Following this action, Avtex ceased operations at the facility. On November 11, 1989, EPA Region III responded under CERCLA, declaring an emergency situation due to the uncontrolled nature of the site resulting from the plant shutdown. The EPA removal action was activated to stabilize the tons of bulk chemicals left unattended onsite. This included carbon disulfide, sulfuric acid, and system acid left at the facility. An integral part of EPA's site stabilization activities included maintaining freeboard in the approximately 120 acres of industrial lagoons onsite. If left unattended, these lagoons presented a serious threat of release of pollutants to the South Fork of the Shenandoah River with subsequent impacts to drinking water intakes downriver.

On February 2, 1990, EPA issued an Administrative Order (AO) to FMC Corporation requiring them to maintain freeboard in the sulfate basins and emergency lagoon by treating the industrial wastewater in accordance with NPDES discharge limits set by the SWCB. On April 30, 1990, pursuant to the AO FMC took over full operation of the wastewater treatment plant initiated and operated by EPA to maintain freeboard. Wastewater treatment will continue until a final remedial alternative is developed for the wastewater lagoons. This interim measure is needed to protect the Shenandoah River from uncontrolled discharges of hazardous substances pending completion of a forthcoming remedial investigation and feasibility study (RI/FS) of the entire site.

On or about February 6, 1990, Avtex Fibers Inc., and Avtex Fibers-Front Royal, Inc., (collectively "Avtex") had filed for bankruptcy under Chapter 11 of the federal bankruptcy code. The federal bankruptcy judge has appointed a corporate trustee, Anthony H. Murray, Jr., Inc., to represent Avtex in all matters. On August 28, 1990, EPA issued an Administrative Order (AO) to Avtex and the corporate trustee which requires the corporate trustee, among other things, to submit a site-specific Health and Safety Plan (HASP) that protects the health and safety of workers, other personnel, and the public from the hazardous substances and other safety hazards at the site.

Highlights of Community Participation

Numerous public participation activities have been conducted since the start of the removal action in November of 1989. For the first three weeks of the removal action, a community relations coordinator was on-scene. During that time EPA established an Emergency Response Center and a telephone hot-line at the local youth center in Front Royal. Press updates were provided at least four times a day and the local radio station, WFTR, acted as a conduit for information that had to be released immediately. The local cable TV channel was also used to provide information updates.

Following the November 1989, response, several public meetings were held to bring the public and press up-to-date activities at the site. Elected officials and the press were taken on site tours to provide a first-hand view of site conditions. Currently, town officials and the media are updated weekly by the EPA on site activities.

LA THE DESIGNATION

The proposed plan describing the selected remedy for the second operable unit at the Avtex Fibers-Front Royal site was released to the public on August 14, 1990. This document and the pertinent information generated from the EPA Superfund removal and remedial programs were made available to the public in the local information repository maintained at the Samuels Public

Library in Front Royal, Virginia. The notice of availability of these documents was published in the Northern Virginia Daily on August 14, 1990. A public comment period was held from August 14, 1990 to September 14, 1990. On August 22, 1990, a public meeting was held at the Front Royal Youth Center specifically to elicit public comments on the proposed plan for the preferred alternative. At this meeting, representatives from EPA and the Virginia Department of Waste Management answered questions regarding site problems and the remedial alternatives under consideration. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision.

Scope and Role of Action

As discussed above, because of the size and complexity of the Avtex site, the EPA has determined that cleanup at the site will be guided by management principles which will expedite the completion of total site cleanup. As a result, EPA is addressing portions of the site contamination using its removal response authorities; whereas other portions will be addressed as part of the remedial program.

The remedial process at the Avtex Fibers site is enormous in scope and complexity. The site occupies approximately 440 acres, 60 acres of which are under roof and includes 23 unlined disposal lagoons located on the east bank of the Shenandoah River. Since performing the November 1989 removal action, EPA's OSC has remained at the site responding to releases and threats of releases of hazardous substances, overseeing FMC's operation of the wastewater treatment facility, overseeing the activities of the corporate bankruptcy trustee, his agents and contractors, assessing the nature and extent of immediate threats to the public health, welfare, and the environment, and overall safety measures in regard to this site. To this end the EPA, following the NCP, has taken a phased analysis approach to responding to site conditions. EPA's removal program has taken action to achieve significant risk reduction quickly and stabilize the numerous risks following the shutdown of activities by Avtex at the site. As part of the removal response activities, however, the OSC determined that further actions are necessary and appropriate to achieve significant risk reduction quickly prior to beginning the RI/FS process for the entire site. [see Section 300.430 of the NCP, 55 Federal Register at 8846 (March 8, 1990)]. With these principles in mind, the EPA has determined that certain remedial actions should be accelerated to achieve significant risk reductions at Avtex.

The objective of this accelerated remedial action is to mitigate potential risks to public health and the environment associated with wastes contained in drums, PCB contaminated soils, the acid reclaim facility and the possible lack of site security, control, maintenance and health and safety measures. Additionally, the remedial action will remove obstructions to future site investigations and remediation efforts. This action will be the second operable unit (OU 2) of a long-term remediation to address all the threats posed to public health and the environment by the Avtex Fibers site.

EPA expects treatment to be the preferred method to address principal threats posed by a site, wherever practicable. Principal threats are characterized as waste that cannot be reliably controlled in place, such as liquids, highly mobile materials, and high concentrations of toxic compounds. This action will achieve the program's expectation through treatment of all liquid hazardous wastes contained in the drums. A portion of the PCB laden soils does meet the definition of a principal

threat, however, EPA believes that volume to be a small part of the total estimated volume of contaminated soil and, therefore, would not be cost-effective to treat. The entire estimated volume of PCB contaminated soils will be disposed in an approved chemical waste landfill.

As documented in the September 1988 ROD, EPA selected a partial source control remedy in operable unit 1. Operable unit 1 addresses ground water contamination resulting from three viscose disposal basins. That operable unit is currently in the remedial design stage.

After responding to the emergency situation at the site in November 1990, EPA recognized the need for an RI/FS which thoroughly investigates site conditions beyond the groundwater contamination study performed in 1986. As such, EPA intends to continue site investigations and remedial measures which will focus on additional site structures, ground water, surface water and sediments of the Shenandoah River, plant soils, the sewer system and the 25 waste disposal areas previously discussed. As the site evaluation continues and other remedial actions are deemed necessary additional operable units will be defined to facilitate the cleanup.

Site Characteristics Addressed by the Remedy

As part of its early removal actions, 2,879 (55-gallon) drums were segregated according to existing drum labels, secured and staged onsite by EPA. Drums are currently staged in four areas at the site: shipping #1, shipping #5, pulp storage #1 and beam storage (see Figure 2). According to the outer drum labeling, the drums are believed to contain both hazardous and non-hazardous substances including lubricating oil, acids, bases, flammables, PCB containing oil and solvents. Drums containing solvent wastes may pose a potential fire and/or explosion threat. Continued weathering of the plant building and structures could result in a potential release of unidentified substances into the environment and mixing of incompatible wastes.

PCB contaminated soils were identified in soils surrounding the polyester loading dock by Avtex as part of an EPA required PCB study and cleanup. The subsequent plant shutdown prevented completion of these cleanup activities. Approximately 5,000 cubic yards of soil contaminated with PCBs at levels exceeding 10 parts per million (ppm) are present onsite. Chemical analysis of soils by Avtex in these areas reveal concentrations ranging for 0.3 ppm up to 3,365 ppm. The PCB contaminated soils are estimated to encompass a 34,000 square foot surface area. The vertical extent of contamination above 10 ppm is approximately 2 feet. The PCB contaminated soils have the ability to migrate into the sewer system. Contaminated soils are in the direct pathway to Manhole I which is adjacent to the polypropolyene process sewer. The OSC has determined that the potential for continuing release to the process sewer exists. The process sewer discharges to sulfate basin 4. The November 1989 removal response activities included an assessment of the various basins to evaluate containment capacities. Based upon that assessment, it was recommended that no additional water be placed into sulfate basin 4. This recommendation was based on observed erosion at the toe of the berm which encloses the south side of the basin by a small stream. As previously discussed, the sulfate basins are located in the floodplain. In the event of a heavy rain, i.e., a ten-year storm, the disposal area would be flooded. The soil at the stream elevation is quite sandy and therefore easily erodible. The combination of an increased pond level in the basin with a rain-swollen stream eroding the embankment toe could lead to a failure of the basin's containment structure and a release of its contents to the Shenandoah River.

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The plant's acid reclaim facility is in extremely poor condition. Weathering, poor maintenance and production practices have caused significant corrosion of the building structure and erosion of the foundation. A series of structural studies were conducted at the site by the Department of Labor during the period 6/12/87 to 8/89. The acid reclaim area was considered to have significant structural problems at that time. Avtex was subsequently ordered to perform corrective action at the plant, including the acid reclaim area, as a result of litigation by the Department of Labor between 1988 and 1989. Avtex had begun repairs in the acid reclaim area, however, site shutdown prevented completion of these activities. During removal response activities, the OSC consulted with a structural engineer and declared the facility extremely unstable. Continued degradation through normal weathering could cause the structure to collapse, thereby presenting a safety hazard to response action workers and/or trespassers. Such a structural collapse could also affect nearby process buildings where vessels and process lines still contain hazardous substances, thereby causing a release of these hazardous substances which could potentially impact soils and ground water. Historically, spills which occurred in the building from process tanks, pumps or piping were routed to the treatment plant via an acid sewer. Considering the drainage pattern and existing floor conditions, it is likely that spilled materials infiltrated into ground water through foundation cracks. Numerous tanks associated with the process that took place in the three-story building included the following: crystallizer tanks, acid evaporator tanks, rotary filter tanks, anhydrous evaporator tanks, melter tank, mother liquor tanks, glaubers slurry tank, glaubers slurry buffer tank, fine salt settler tank, zinc settler tanks, caustic soda tanks, small staple sump tank, chemical cleaning tank, raw acid tanks, evaporated acid tanks, magma acid tanks, filtered acid tanks, and mixed acid storage tanks. These tanks and process lines were drained as part of the November 1989 removal action. Most of the building is constructed of brick and pre-cast roof. Demolishing the building will generate an estimated 8,000 tons of debris. It is anticipated that salvageable tanks can be liquidated by the corporate bankruptcy trustee. The floor-by-floor layout of the acid reclaim facility is shown on Figures 3, 4, 5, and 6.

Site security, control, maintenance, and health and safety measures are required to ensure protection of human health and the environment. Security is necessary to prevent public access to the chemical and physical hazards which still exist at the site. In the event that site maintenance is not provided, the facility's structures could deteriorate, resulting in release of hazardous substances still present.

Summary of Site Risks

The problems and risks associated with each of the components of the remedial action are identified as follows:

Past poor maintenance practices and weathering have caused the acid reclaim facility to become extremely unstable. Acid contained within the vessels of this facility was drained and treated onsite during previous removal actions. However, the OSC has determined that continued degradation of this facility via normal weathering can cause a complete collapse. The OSC has also determined that a failure of the facility could impact other nearby process buildings where both vessels and process lines still contain hazardous substances, including flammable materials, thereby causing a release. A major release caused by this type of collapse could force the evacuation of a large number of people in close proximity to the site. In addition, continued degradation of the acid reclaim facility

through the normal weathering process poses a physical safety hazard to visitors and workers onsite.

The acid reclaim facility also presents an obstacle to future site work. Without removal of this structure, a comprehensive investigation of contamination remaining at the site cannot be completed.

The concentration of PCBs that defines the area to be addressed for soils onsite depends primarily on the type of exposure that will occur based on land use, i.e, residential or industrial. EPA has published "Guidance on Remedial Actions for Superfund Sites with PCB contamination." The Superfund cleanup levels contained in that guidance are consistent with the TSCA PCB spill cleanup policy in 40 CFR Part 61, Subpart G. The Superfund cleanup guidelines are based on generic exposure assumptions. The cleanup guideline Superfund has established as protective for industrial land use is 10 - 25 ppm. PCB levels ranging from 0.3 ppm to 3,365 ppm were found in soils at the Avtex site. PCB levels exceeding 10 ppm in soils surrounding the loading dock are determined to pose an unacceptable risk from exposure to humans. PCBs are classified as a suspected human carcinogens.

Other factors that define an area to be addressed include the potential for PCBs to migrate and affect environmental receptors. The PCB contaminated soils are located in a direct migration pathway to the polypropylene process sewer which discharges to sulfate basin 4. The containment ability of sulfate basin 4 is questionable due to erosion of the berm which has occurred. In the event of a very heavy rainfall event, the basin's containment could be lost and contents released to the Shenandoah River. PCBs are persistent in the environment, have a tendency to bioaccumulate in fat-soluble organs of fish and mammals, and are toxic at low levels. PCB levels in excess of the 2.0 ppm FDA Tolerance Level have been documented in aquatic life downstream of the facility demonstrating that PCBs are bioaccumulating and establishing additional risk factors.

- * According to the outer drum labeling, the drums are believed to contain both hazardous and non-hazardous substances including lubricating oil, acids, bases, flammables, PCB containing oil, and solvents. As a temporary measure, drums which were in poor condition or leaking were overpacked and staged in four areas of the plant as part of the removal action. If left onsite, drums would be subject to freeze/thaw conditions which may compromise the integrity of the drum and may result in a release of hazardous substances. Any drums which may rupture have the potential to impact other drums of unidentified substances. The solvent containing drums present a fire and/or explosion threat if allowed to remain onsite.
- * Lack of site security, control, and health and safety measures necessary to prevent public access that may present an unacceptable direct contact risk to trespassers because of the chemical and physical hazards which still exist at the site.

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of Alternatives

Using information collected by EPA's On-Scene Coordinator, two remedial action alternatives were developed.

Alternative 1: No Action

The National Contingency Plan (NCP) requires that this alternative be evaluated at every site to establish a baseline for comparison of other remedial alternatives. This alternative will not include any remedial actions at this time to address the risks associated with drummed wastes, PCB contaminated soils, the acid reclaim facility, or lack of site security, control, maintenance, and health and safety measures.

This alternative would not minimize or appreciably eliminate, at this time, any threats to human health and the environment that currently exist. In addition, this alternative does not satisfy the statutory mandate to utilize permanent solutions, nor does it comply with the statutory preference for remedial actions that reduce toxicity, mobility, or volume. This alternative would allow no remediation at the site until completion of an RI/FS report.

Alternative 2: Completion of Site Stabilization Activities

The components of this alternative include:

Identification, transportation, and disposal of the 2,879 drums of potentially hazardous substances currently onsite. The actual characterization and volume of hazardous substances contained in the drums is presently unknown and will have to be determined during the identification period. The identification process will include sampling and field screening for chemical characteristics, determination of hazard category for each drum, and compatability testing for compositing the waste streams. Waste streams determined to be compatible will then be bulked using sound scientific methods approved by EPA. Wastes streams determined to be hazardous in accordance with the Resource Conservation and Recovery Act (RCRA) and having the same RCRA waste code may be bulked for transportation and disposal. Liquid wastes determined to be RCRA hazardous wastes will be treated at an appropriate offsite treatment facility. Drums containing RCRA hazardous wastes, if any, would be transported to an appropriate treatment facility in compliance with standards for hazardous waste generators and transporters (40 CFR 262 and 263) and DOT regulations pertaining to transportation of hazardous materials. Treatment technologies are not specified at this point due to the sampling and analysis still necessary. Final selection of treatment technologies and volumes to be treated will be made based on vendor responses to performance specifications. The contractor procured for this action will be responsible for ensuring proper disposal and/or destruction of the empty drums. Options to be considered for empty drums are decontamination and recycling, crushing and disposing in a secure RCRA landfill, or incineration. Drums which are determined to contain nonhazardous substances will be left onsite and available for liquidation by the corporate trustee upon EPA's approval.

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- Excavation, transportation, and disposal of PCB contaminated soils to an offsite chemical waste landfill in compliance with Toxic Substances Control Act (TSCA) 40 CFR 761.75. EPA published guidance on "Remedial Actions for Superfund Sites with PCB Contamination" which is consistent with the nationwide TSCA PCB cleanup policy in 40 CFR Part 61, Subpart G. Superfund guidance requires PCB spills to be cleaned up to different levels primarily based on the type of exposure that will occur based on land use, i.e., residential or industrial. EPA believes future land for this site to be industrial. Recommended Superfund soil action levels of industrial land use range from 10-25 ppm. For this operable unit, soils contaminated with PCBs in excess of 10 ppm will be excavated and transported offsite via railcar for ultimate disposal at an approved chemical waste landfill. Railcars to be used are dedicated strictly to the transportation of PCBs. The receiving facility will have the responsibility for performing any decontamination necessary. Transportation requirements for hazardous wastes would be applicable for the site action. Following removal of soils, the excavated area will be resampled to confirm that the cleanup level has been met. The excavated area will be restored as necessary which may include grading and/or dust and erosion controls (seeding). The need to alert future land purchasers of PCB contamination above residential use will be determined in the final operable unit for the site so that all potential notices can be placed at one time.
- * The alternative also includes dismantling and demolition of the acid reclaim facility. Both building and equipment within the building will be decontaminated, if necessary, using best management practices. Upon EPA approval, decontaminated usable equipment from within the building may be liquidated by the bankruptcy corporate trustee. Other metal structures may be sold as scrap or recycled by the corporate trustee upon approval by EPA. or left onsite. Decontaminated building rubble and debris will be left onsite. If building decontamination is necessary, decontamination fluids would be treated at the onsite wastewater treatment plant. However, based on current knowledge of past operations in the facility, it has been determined that the building debris and rubble will not be contaminated with any RCRA hazardous waste. Therefore, RCRA is not applicable to the disposal of the building rubble and debris.
- Continued site security, control, maintenance and health and safety to ensure protection of human health and the environment. Compliance with Occupational Safety and Health Administration (OSHA) standards for worker health and safety 29 CFR Part 1910 and 1926, 1904 will be required.

Summary of Comparative Analysis of Alternatives

A detailed analysis was performed on both alternatives using the nine criteria specified in the NCP in order to select a site remedy. The following is a summary of the comparison of both alternatives based on the evaluation criteria. These nine criteria are: 1) overall protection of human health and the environment, 2) compliance with applicable or relevant and appropriate requirements (ARARs), 3) long-term effectiveness and permanence, 4) reduction of toxicity, mobility or volume through treatment, 5) short-term effectiveness, 6) implementability, 7) cost, 8) State acceptance, and 9) community acceptance.

1. Overall Protection of Human Health and the Environment

Alternative 2 would eliminate the threat of release of hazardous substances in the drums; significantly reduce the potential migration of PCBs into the environment; significantly reduce the potential of direct contact with the chemical and physical hazards that still exist onsite through site security, control, etc., and significantly reduce the safety hazard and threat of a release due to the structural instability of the acid reclaim facility, in a timely manner. In addition, the specified PCB cleanup level is protective of human health for industrial land use. Alternative 1 would not reduce any site risks at this time.

2. Compliance with ARARs

Each alternative is evaluated for compliance with ARARs, including chemical-specific, action-specific, and location-specific ARARs. Chemical-specific ARARs may be health or risk-based values that govern the extent of site cleanup. Such ARARs may be actual concentration-based cleanup levels. Location-specific ARARs include requirements which govern the development and/or use of natural or culturally sensitive site features such as wetlands, scenic rivers, and floodplains. Action-specific ARARs pertain to the implementation of the remedy.

The alternatives and associated ARARs for both remedial alternatives are presented in Table 1. Only chemical-specific and action-specific ARARs are pertinent to this action, since these activities do not encompass areas which involve location-specific ARARs. Alternative 2 will meet all TSCA ARARs for the PCB contaminated soil and the appropriate RCRA requirements for drummed wastes if determined to be an ARAR. ARARs are not germane in the case of the No Action Alternative.

3. Long-term Effectiveness and Permanence

This evaluation focuses on the results of a remedial action in terms of the risk remaining and the ability of the remedy to maintain reliable protection of human health and the environment at the site after response objectives have been met.

Selection of the No Action alternative at this time would afford the lowest degree of long-term effectiveness and permanence since contaminated soils, drummed wastes and the facility structure would remain onsite over a long period of time (>3 years) potentially adversely impacting human health and the environment. Under Alternative 2, drummed wastes and PCB contaminated soils would be removed leaving no residual risk from these areas that would threaten the effectiveness over time. The area of PCB soil cleanup would allow for unlimited industrial use, but, it would require restrictions for residential use. This use restriction will likely be a deed notice to be decided in a future operable unit.

4. Reduction of Toxicity, Mobility or Volume through Treatment

This evaluation addresses the statutory preference for selecting remedial actions that employ treatment technologies which permanently and significantly reduce toxicity, mobility, or volume of the hazardous substances. This preference is satisfied when treatment is used to reduce the

Table 1

ARAR Summary

Action	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Determination</u>
Identification of waste streams in drums	N/A	RCRA 40 CFR, Parts 261, 264, 268.	Potentially Relevant and Appropriate
		Virginia Hazardous Waste Management Regulations (VR 672- 10-1), January 1, 1989.	Potentially Relevant and Appropriate
Offsite transport of drummed wastes and PCB soils	N/A	Transport of hazardous waste streams for disposal must meet	Applicable
	and the same of th	DOT regulations as outlined in 49 CFR Part 107, Sections	and the second s
•	្រីស្រាស់ ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្ ក្រុមប្រជាពលរដ្ឋមន្ត្រីក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន្តែក្រុម ម៉ូន	171.1-171.500 and RCRA regulations as	
1		outlined in 40 CFR Part 262 and 263.	
	10 (10 (10 (10 (10 (10 (10 (10 (10 (10 (Transport of waste streams must also satisfy Virginia's	Applicable
en e		Hazardous Waste Management Regulations, January 1,	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1989.	
Removal and disposal	100 (100 (100 (100 (100 (100 (100 (100	Ali appropriate	Relevant and Appropriate
of drums		regulations concerning Use and Management	resolution and representation
	ett jakki ett jakki	of Containers; 40 CFR Part 264, Sections 170- 178.	• ,
	og to the state of the control of th	Virginia Hazardous	Relevant and
		Waste Management Regulations, January 1, 1989.	Appropriate

Landfill disposal of drummed waste streams	N/A	RCRA Land Disposal Restrictions 40 CFR Sections 268.1-268.50.	Relevant and Appropriate
		Virginia Hazardous Waste Management Regulations, January 1, 1989.	Relevant and Appropriate
Landfill disposal of PCB soils	N/A	TSCA disposal requirements for non-liquid wastes, 40 CFR Section 761.60 (a)(4) and (e).	Applicable
PCB cleanup levels	N/A	"Guidance on Remedial Actions for Superfund Sites with PCB contamination"	To be considered
		TSCA PCB Cleanup Policy, 40 CFR Part 61, Subpart G.	To be considered
Excavation of PCB contaminated soils	N/A	Virginia Erosion and Sediment Control Law, Code of Virginia Sections 10.1-560 et. seq.	Relevant and Appropriate
	N/A	Virginia Air Pollution Control Board, Code of Virginia Sections 10.1- 1300 et.seq.	Potentially Relevant and Appropriate
	N/A	Virginia Regulations for the Control and Abatement of Air Pollution (VR-120-01- 01)	Potentially Relevant and Appropriate
	N/A	Clean Air Act, 42 U.S.C. 7401	Potentially Relevant and Appropriate

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Acid Reclaim Rubble and Debris	N/A Virginia Solid Waste Rel Management Appr Regulations (VR-672-	evant and opriate
	Regulations (VK-6/2-	

Worker and visitor health and safety	N/A Requirements for workers engaging in	Applicable
	PERMITTE POST A CONTINUE OCT A	1
	29 CFR, Section 1910.	

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principal threats at a site through destruction of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.

The No Action Alternative provides no reduction of toxicity, mobility, or volume of wastes at the site.

The Site Stabilization Alternative may reduce the toxicity, mobility or volume of contaminants if treatment is selected for the contents of the drummed wastes. As part of this action, EPA will determine if decontamination of the acid reclaim facility is necessary. Should decontamination be required wastewaters will be treated through a wastewater treatment plant.

5. Short-Term Effectiveness

This evaluation concentrates on the effects on human health and the environment which may occur while the alternative is being implemented and until the remedial objectives are met. The following factors were used to evaluate the short-term effectiveness of each alternative: protection of the community and workers during the remedial actions, environmental impacts from implementation until completion of the remedial action. Implementation of Alternative 1 would not result in increased risk to the public, workers, or the environment because no remedial actions would occur. Alternative 2 would require proper adherence to safety measures to protect onsite workers and the local community during excavation and dismantling/demolition activities. Risks posed to the local community through the offsite transportation of wastes are minimal. Additionally, all the remedial action objectives can be achieved within one year. Site security, maintenance, control and health and safety measures will remain in effect at all times.

6. Implementability

This evaluation deals with the technical and administrative feasibility of implementing the alternatives and the availability of the various services and materials required during its implementation.

Implementability is not applicable to Alternative 1 since no action would be taken.

In terms of technical feasibility, no obstacles for implementing Alternative 2 appear to exist. This alternative requires structural dismantling, demolition and possible construction of a decontamination pad which are common practices. Drum waste compatability testing, batching, treatment, and disposal are well established and utilized procedures which will be implemented through the use of performance specification approved by EPA. Excavation and transportation of PCB contaminated soils are also commonly employed and implemented environmental practices.

The availability of offsite landfills for hazardous materials is an important consideration for this alternative. Such landfills have been determined to be available for the PCB contaminated soils. The availability of RCRA treatment and disposal facilities is a concern for implementation of the alternative. This will be carefully evaluated upon determination of the treatment and disposal needs.

Implementation of Alternative 2 requires a ten percent (10%) cost share from the Commonwealth of Virginia. This required cost share may present an administrative impediment to the implementation of the remedy due to the Commonwealth's current budget constraints.

7. Cost

This evaluation examines the estimated costs for implementing the remedial alternatives. Total costs associated with the Site Stabilization Alternative are estimated to be \$8,708,400. These costs are capital costs for project implementation which include applicable transportation and disposal expenses. There will be no operation and maintenance costs associated with this alternative.

8. State Acceptance

The Virginia Department of Waste Management (DWM) concurs with the U.S. EPA's selection of Alternative 2 as the preferred remedial alternative for the second operable unit at the Avtex Fibers site.

9. Community Acceptance

A public comment period for the Proposed Plan was held from August 14, 1990 to September 14, 1990. On August 22, 1990, a public meeting was held at the Front Royal Youth Center to discuss EPA's preferred alternative as described in the Proposed Plan. Area residents, local, and State officials that attended the meeting were supportive of EPA's preferred alternative, i.e., Alternative 2. Community acceptance is assessed in the attached Responsiveness Summary. The Responsiveness Summary provides a thorough review of the public comments received on the Proposed Plan, and the EPA's responses to those comments.

Selected Remedy

Section 121 of CERCLA, as amended by SARA, and the National Contingency Plan (NCP) establish a variety of requirements relating to the selection of remedial actions. Based upon consideration of the requirements of CERCLA, the detailed analysis of alternatives and public comments, EPA has selected Alternative 2 - Continued Site Stabilization Activities. This Alternative consists of:

- * Identification, transportation, and offsite disposal of drummed wastes. Liquid waste streams classified as hazardous according to RCRA will be treated utilizing appropriate technologies.
- Excavation, transportation and disposal of an estimated 5,000 cubic yards of PCB contaminated soils to an offsite TSCA approved chemical waste landfill. Recommended soil action levels for industrial land use range between 10-25 ppm. To ensure protection of human health and the environment, soils contaminated with PCBs in excess of 10 ppm will be excavated. Following removal of soils, the excavated area will be resampled to confirm that the cleanup level has been met. The excavated area will be restored as necessary which may include grading and/or dust and erosion controls (seeding).

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- Dismantling and demolition of the acid reclaim building. Both the building and the equipment within the building, to the maximum extent practicable and necessary, will be decontaminated using best management practices. Decontaminated usable equipment from within the building may be sold by the corporate trustee. Upon approval by EPA, the corporate trustee may also sell other facility components as scrap or for recycling. Decontaminated building rubble, debris and facility components which are not recycled or sold will be left onsite.
- Continued site security, control, maintenance, and health and safety measures to ensure protection of human health and the environment.

EPA has collected a significant amount of data regarding site conditions through the removal response actions which have been conducted at the site since September 1989. The Agency has evaluated alternatives based on the data collected and the Administrative Record and has determined the remedial alternative selected in this ROD represents the quickest way to stabilize the site and address risks previously outlined. Accordingly, EPA issues this ROD to eliminate, reduce, and control the hazards described in this document consistent with the NCP's bias for action.

The following represents a breakdown of costs (including contingencies) for each component of the remedy:

	Component	<u>Cost</u>
1.	Drummed wastes	\$ 3,000,000
2.	PCB contaminated soils	\$ 2,678,400
3.	Acid reclaim	\$ 1,680,000
4.	Site security, etc.	\$ 1,350,000
	TOTAL	\$ 8,708,840

The Statutory Determinations

Alternative 2 would achieve substantial reduction in risks and safety hazards through removal of drummed wastes, PCB soils, and the demolition of the acid reclaim structure. Risks associated with migration of PCBs, potential direct contact with drummed wastes, and structural collapse of the acid reclaim building would be eliminated. Obstructions to future site investigations will also be reduced through the demolition of the acid reclaim building. In addition, there are no unacceptable short term risks or cross media impacts caused by the implementation of the remedy.

This alternative is consistent with the NCP which anticipates that the EPA will take early action at sites where appropriate, and to remediate sites in phases using operable units as early actions to eliminate, reduce or control the hazards posed by a site or to expedite the completion of total site cleanup. The EPA is taking a phased approach to response actions at the site. The selected remedy accomplishes the goal of taking an action where there is sufficient information available to support the remedy selected. This remedy will streamline the cleanup process at Avtex and be consistent with the implementation of a total site cleanup in the future.

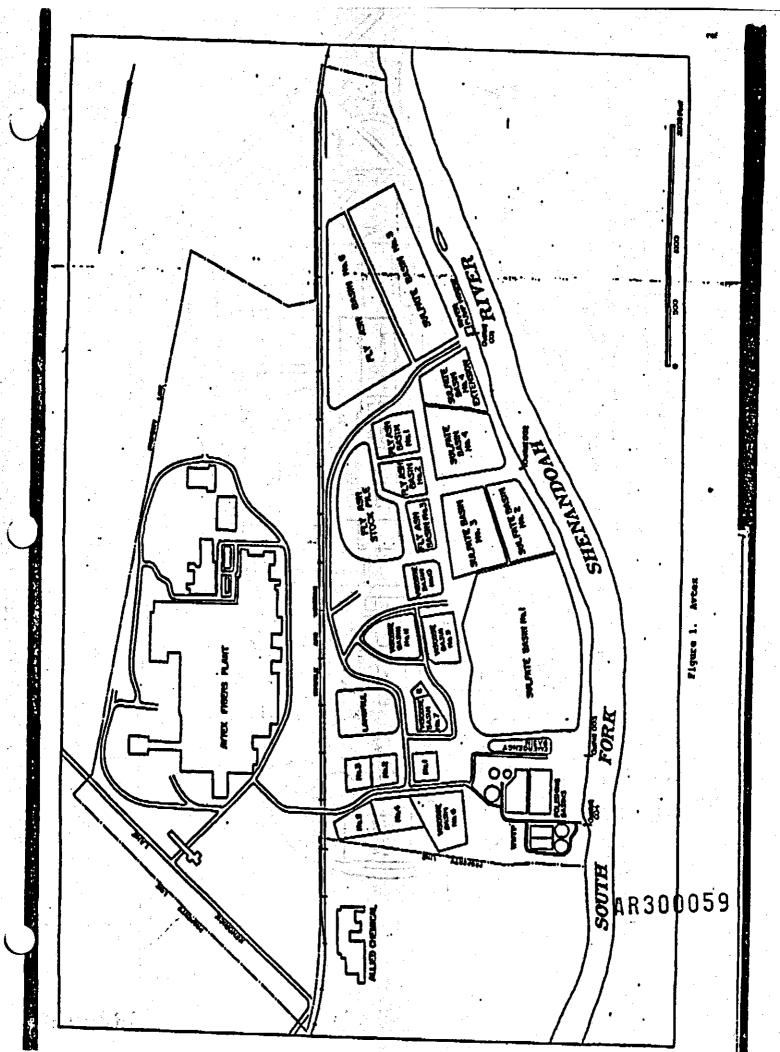
This action is a final action for this operable unit, however it is not the final action for the site nor does it attempt to ensure compliance with ARARs for the entire site. It will be consistent, however, with the chemical-specific ARARs for PCBs and action-specific ARARs for PCB soils and transportation and disposal of hazardous materials. Where not applicable, RCRA regulations may still be relevant and appropriate for the drummed wastes.

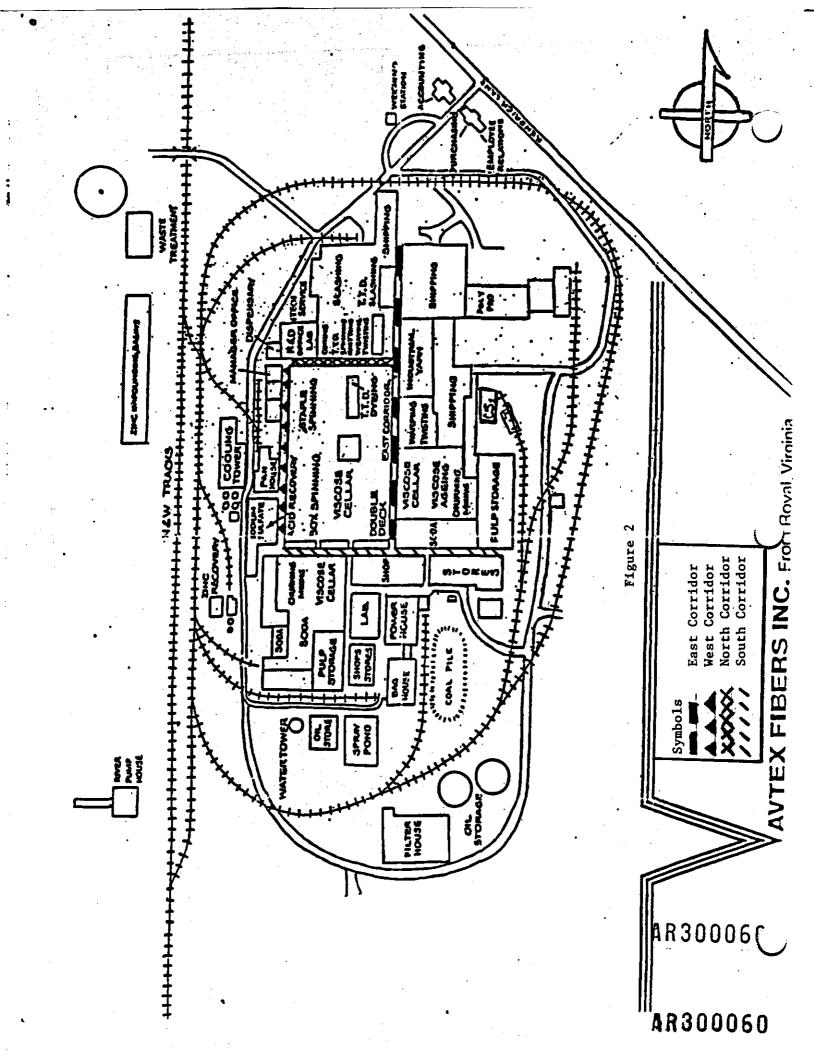
As required by Section 121 of CERCLA, as amended, U.S.C. Section 9621, Alternative 2 is protective of human health and the environment and reduces the toxicity, mobility and volume of contamination. The detailed analysis was performed using the nine criteria in order to select a site remedy. Protectiveness was the most important evaluation criteria to the selection of Alternative 2 for this operable unit. The remedy will also attain ARARs which are listed in Table 1 and utilize permanent solutions to the maximum extent practicable. This Alternative is cost-effective, establishes implementable objectives with a remedy that provides long-term remediation by removing or destroying contaminants of concern from the site.

The Commonwealth of Virginia is in concurrence with the selected remedy. Although public comments were received primarily concerning the PCB cleanup level, those comments are fully addressed in the Responsiveness Summary.

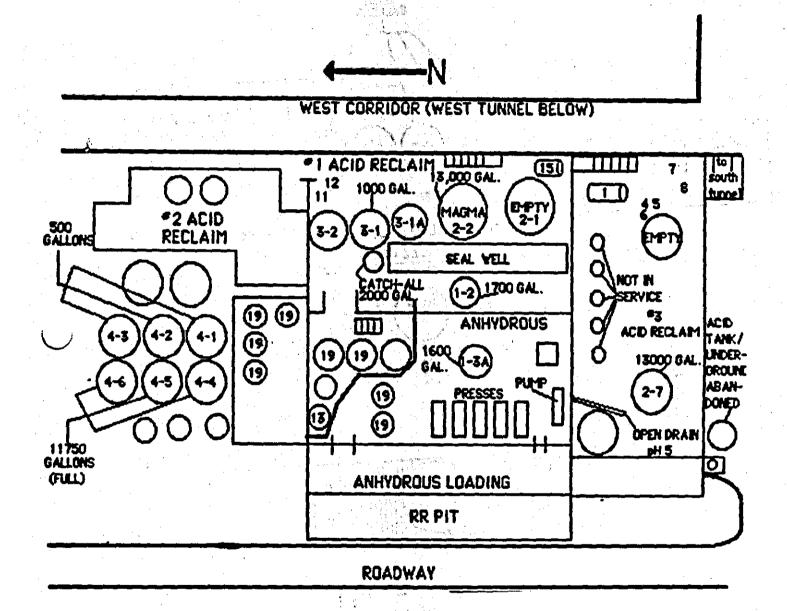
The Proposed Plan for the Avtex Fibers site was released for public comment on August 14, 1990. The Proposed Plan identified Alternative 2 as the preferred alternative. EPA reviewed the written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the remedy were necessary.

III. FIGURES



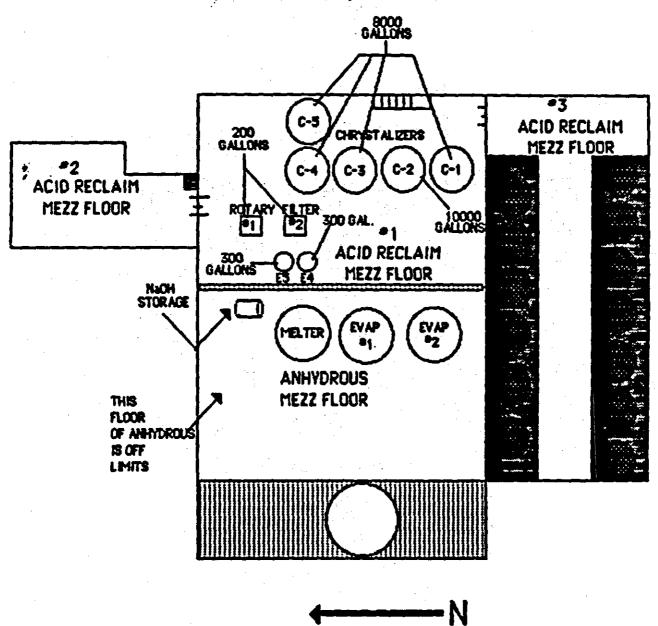


ACID RECLAIM SECTION IV GROUND FLOOR (FIRST FLOOR)



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ACID RECLAIM MEZZ FLOOR SECTION IV (2ND FLOOR)



ACID RECLAIM OPERATING FLOOR SECTION IV (3RD FLOOR)

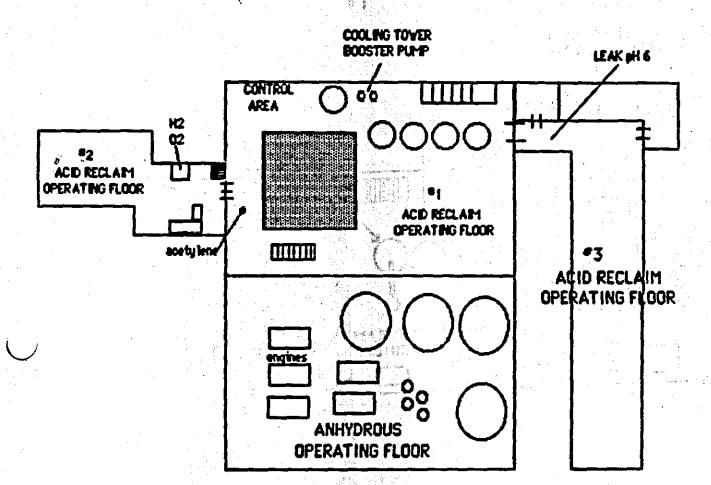
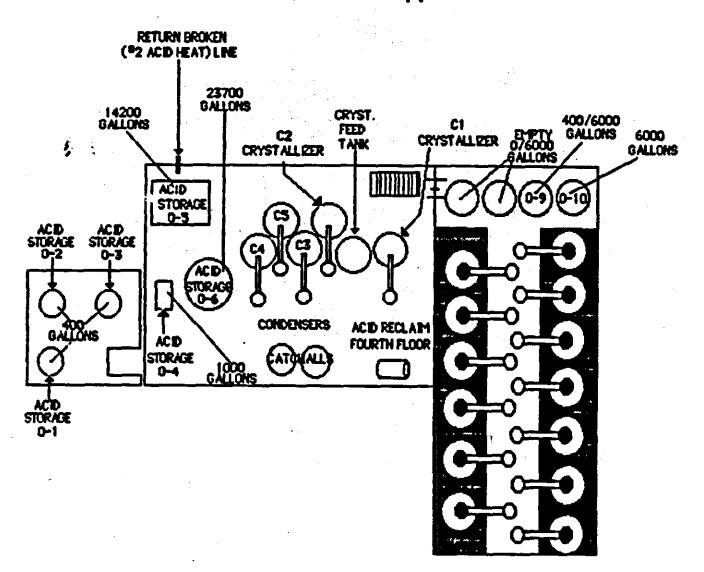


Figure 5

ACID RECLAIM FOURTH FLOOR SECTION IV (CONDENSER FLOOR)





RESPONSIVENESS SUMMARY

AVTEX FIBERS SUPERFUND SITE SEPTEMBER 1990

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RESPONSIVENESS SUMMARY

AVTEX FIBERS, OPERABLE UNIT 2 FRONT ROYAL, VIRGINIA

I. RESPONSIVENESS SUMMARY OVERVIEW

The U.S. Environmental Protection Agency (EPA) held a public comment period from August 14, 1990, through September 14, 1990, for interested parties to comment on the Proposed Plan for remedial action at the Avtex Fibers Superfund Site in Front Royal, Virginia.

The Proposed Plan, which has been provided as Appendix A to this document, provides a summary of the background information leading up to the public comment period. Specifically, the Proposed Plan includes information pertaining to the history of the Avtex Fibers-Front Royal site, the scope of the proposed cleanup action and its role in the overall site cleanup, a qualitative assessment of risk, the descriptions of the remedial alternatives evaluated by EPA, the identification of EPA's preferred alternative, the rationale for EPA's preferred alternative, and the community's role in the remedy selection process.

EPA held a public meeting at 7:00 p.m. on August 22, 1990, at the Front Royal Youth Center to outline the remedial alternatives described in the Proposed Plan in order to present EPA's preferred alternative for continuing site stabilization activities.

The responsiveness summary, required by the Superfund Law, provides a summary of citizen's comments and concerns identified and received during the public comment period, and EPA's responses to those comments and concerns. All comments received by EPA during the public comment period will be considered in EPA's final decision for selecting the remedial alternative to continue site stabilization activities at the Avtex Fibers site.

This responsiveness summary is organized into the sections and appendices as described below:

- I. Responsiveness summary overview. This section outlines the purposes of the public comment period and the responsiveness summary.
- II. Summary of major questions and comments received during the public comment period and EPA responses to these comments. This section summarizes the oral comments received by EPA at the August 22, 1990, public meeting and provides EPA's responses to these comments.
- III. Written comments received during the public comment period and EPA responses to these comments.
 - A. Comments which are relevant to the remedial action in a general nature received by the EPA, as well as EPA's written response to those letters.
 - B. Comments which pertain to the response action for drummed wastes.
 - C. Comments pertaining to the PCB remedial action.

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- D. Comments concerning the site security, maintenance and health and safety.
- E. Comments relative to the costs associated with the remedial action.
- F. Comments pertaining to the applicable or relevant and appropriate requirements for the response action.
 - Appendix A: The Proposed Remedial Action Plan which was distributed to the public during the public meeting on August 22, 1990.
 - Appendix B: Sign-in sheets from the August 22, 1990, Public Meeting held at the Front Royal Youth Center, Front Royal, Virginia.

II. PUBLIC MEETING COMMENTS

On August 22, 1990, EPA held a public information meeting to present the Agency's proposed remedial plan for Operable Unit 2 at the Site. Approximately 45 people attended the meeting, which took place from 7:00 p.m. to 8:00 p.m. at the Front Royal Youth Center. Attending the meeting were citizens from the community, local officials, news media, businesses, the Virginia Department of Waste Management and EPA.

Representatives from EPA made a presentation which addressed: the history of the site, the conditions currently existing at the site, an explanation of the Superfund process, a description of the remedial alternatives evaluated for Operable Unit 2, and EPA's proposed alternative for Operable Unit 2.

Following the presentation, there was a question and answer session. During this period the majority of the questions raised were outside the scope of the proposed alternative. For example, the questions that were raised focused on: removal activities at the site, potential impacts to the Shenandoah River from the site waste disposal activities, a study of the Shenandoah River required by a Department of Defense Authorization Bill, health impacts related to ground water contamination, and odors emanating from the property. Representatives from EPA responded to each of these points.

With regard to the proposed alternative, the community appeared to concur with EPA's preference for Alternative 2 to continue site stabilization activities. There were no objections raised to implementing Alternative 2. A question was raised as to whether the Virginia Department of Waste Management would have to sign off this action. A representative from the Department of Waste Management responded that while they agree that the actions specified in the preferred alternative need to be done now, the Department still had some procedural questions with regard to how the action should be completed. At the time of the public meeting Virginia believed that these actions should be completed as part of the removal program as opposed to the remedial program. The Department also indicated that if the action is to be completed as a remedial action, the State would be required to contribute a ten percent cost share. Currently, the Commonwealth of Virginia is operating under budget constraints. Subsequent to the public meeting the Department of Waste Management concurred on the proposed remedial alternative, however, funding options are still being explored.

IIL WRITTEN COMMENTS

A. General Comments

1. During the public comment period written comments were received from five local citizens, including the Warren County Administrator, supporting Alternative 2 as detailed in the Proposed Plan issued August 14, 1990.

EPA Response: EPA appreciated the concurrence of the local citizens on Alternative 2, the preferred remedial alternative.

2. A separate comment was received from a concerned citizen regarding the cleanup responsibility for the Avtex. The commentor believes that there are individuals responsible for the problems at the Avtex Fibers Site that should be held accountable.

EPA Response: EPA conducts Potentially Responsible Party (PRP) searches to determine who may be liable for response costs or performance of response actions. The search for responsible parties continues throughout the course of site activities i.e., the Remedial Investigation/ Feasibility Study (RI/FS), the Remedial Design and the Remedial Action (RD/RA) as additional information is received. If and when additional PRPs are identified, EPA will take appropriate action against these PRPs.

3. A comment was received stating that the plan was a long-term, not a short-term remedial action. A September 21, 1989, memo from Richard Brunker, Toxicologist, to Associate Division Director, Tom Voltaggio and the EPA "Guide on Remedial Actions for Superfund Sites with PCB Contamination" was referenced to support the comment.

EPA Response: The purpose of the September 21, 1989, memo cited above was to provide a rapid assessment of possible health and environmental impacts from the PCBs reported at the facility and from aquatic discharges to in order to assess the need to perform a response under the removal program. However, the conclusions drawn in that memo stated that PCB levels near the loading dock are sufficiently high to cause cancer threats that exceed a 1.0 E-03. The "Guide on Remedial Actions for Superfund Sites with PCB contamination" was utilized for the determination of the PCB cleanup level. The action EPA suggested to take in the Proposed Plan is an accelerated remedial action. EPA's authority to perform this type of action is based on Section 300.430 (e)(1) of the March 8, 1990, Federal Register, National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule (NCP).

The NCP establishes a bias for action in the Superfund Program. The preamble explains that the bias for action and principle of streamlining may appropriately be considered throughout the life of the project. The rule specifically states that "EPA expects to take early action at sites where appropriate, and to remediate sites in phases using operable units as early action to eliminate, reduce or control the hazards posed by a site or to expedite the completion of total site cleanup. In deciding whether to initiate early action, EPA must balance the desire to definitively characterize site risks and analyze alternative remedial approaches for addressing those threats in great detail with the

desire to implement protective measures quickly. EPA is promoting the responsiveness and efficiency of the Superfund program by encouraging action prior to or concurrent with conduct of an RI/FS as information is sufficient to support the remedy of selection. These actions may be taken under removal or remedial authorities, as appropriate." EPA's rationale for performing an accelerated action to remove the PCB contaminated soils is based upon the qualitative risk of PCB migration as discussed in the ROD.

4. The Site Background Section should include mention of the pending suit, <u>FMC</u>
<u>Corporation vs. United States</u>, et al., in the United States District Court.

EPA Response: The Agency does not believe that this litigation is relevant to the remedial action selected. Site history and enforcement activities described in this section are focused on the following: site activities that led to current site problems; site investigations, remedial actions, and removal actions conducted; and enforcement activities pertaining to the site. Additionally, EPA and the public are aware of this litigation as it is a matter of public record in Federal Court.

5. The commentor stated that the Trustee in this case is not an individual. Rather it is Anthony H. Murray, Jr., Inc.

EPA Response: The Record of Decision has been amended to include a statement that the Trustee is Anthony H. Murray, Jr., Inc. Hereafter, reference will be made to the "corporate" bankruptcy Trustee.

6. A comment was included regarding the consideration of only two alternatives. The commentor stated that consideration should be given to additional possible courses of action to resolve site problems in the most cost effective manner possible.

EPA Response: The time period to perform an RI/FS at a site of average complexity is approximately 18 months. EPA believes that the Avtex site is more complicated then average and may take a considerably longer time period to perform an RI/FS there. Existing site conditions justify an accelerated action. Although significant site stabilization measures were taken to eliminate the immediate fire and explosion threats, the potential of a future fire exists. The acid reclaim facility is in very poor condition due to past operation practices and neglect. The threat of release of hazardous substances due to collapse is a real possibility. If performing the response action were to be postponed until the completion of an RI/FS, the probability that this event will occur increases significantly. To delay the actions selected until an RI/FS is completed, does not reduce the risk posed in a timely manner. EPA has chosen to take an accelerated response action based on data which has already been collected concerning site conditions as further explained in comment A.3. This approach to site remediation is also consistent with the long range cleanup goals for the site.

- 7. A comment was made that the plan is conceptual in nature and not sufficiently adequate for the public to properly review and provide meaningful observations.
 - EPA Response: EPA Proposed Plan for the second operable unit at Avtex meets all requirements as set forth in EPA's "Guidance on Preparing Superfund Decision Documents: The Proposed Plan; The Record of Decision, Explanation of Significant Differences; The Record of Decision Amendment" dated June 1989.
- 8. Comments were provided on the implementation of Alternative 2 in terms of what implementation entails, time to complete, what could remain to be completed after this implementation, and potential impact to third-party actions, i.e., availability of labor, materials and supplies.
 - EPA Response: This response is offered to the extent that the EPA understands the comment. As previously stated in the Proposed Plan EPA's realistic estimate for complete implementation of the remedial action is one year. The implementation of the action will be determined to be complete upon fulfillment of the selected remedy as described in the Record of Decision. The evaluation of the nine criteria completed in the ROD include implementability of the remedy. Availability of the various services and materials required during implementation was evaluated and determined not to present and obstacle for implementation. Actions which remain to be performed onsite following the completion of this remedial action will be assessed in subsequent operable units. Continuing site investigations (including an RI/FS for the entire site) and remedial measures will focus on additional site structures, ground water, surface water and sediments of the Shenandoah River, plant soil, the sewer system and waste disposal areas. As the site evaluation continues and other remedial actions are deemed necessary additional operable units will be defined to facilitate site cleanup.
- 9. A commentor on behalf of the Trustee requested an extension of the public comment period until a review of all requested information is made available for review.
 - EPA Response: As required by the NCP, a full 30-day comment period was held to seek public comment on the Proposed Plan. Information pertaining to the proposed plan was available in the Administrative Record located at the Samuels Public Library in Front Royal, Virginia and EPA Region III, Philadelphia, Pennsylvania. It is EPA's belief that Trustee's contractor, Pennoni Associates, Inc. reviewed the Administrative Record in EPA's office. In addition, the OSC offered the Trustee's contractor open access to EPA files maintained onsite. According to the OSC, the contractor never took the opportunity to review information onsite. Finally, the RPM made additional files available to be reviewed on September 12, 13, and/or 14 as a result of a September 10, 1990 phone request from Pennoni. Moreover, the extension was requested on the closing day of the public comment period. For these reasons EPA does not believe the comment period should be extended. Any additional information the Trustee can supply to the EPA will be given due consideration during the response action.

- 10. A comment was received stating that through its environmental engineers, Pennoni Associates Inc., the Trustee has requested access to certain study data and test results upon which the Plan is based for which access has been denied. For that reason, the Trustee is unable to properly comment on the following items:
 - a. The presence of carbon disulfide contamination at the Rivermont Acres Domestic Supply Wells.

EPA Response: This information is public information available in both the EPA repository in Philadelphia, PA and local repository at Samuels Public Library in Front Royal, VA. However, the presence of CS₂ in the Rivermont Acres domestic wells is not pertinent to the preferred remedial alternative. Moreover, the Trustee may have access to this information as it was developed by Avtex.

b. Whether viscose basins 9, 10, and 11 are a source of ground water contamination with respect to elevated levels of carbon disulfide, hydrogen sulfide, arsenic, cadmium, and lead.

EPA Response: See response to comment 2.a. above and the administrative record for the September 30, 1988 Operable Unit 1 ROD.

c. The PCB contamination allegedly in fish tissues, onsite soils, river bank soil and sediment. The Plan also does not reference any elimination of upstream site contamination considerations.

EPA Response: This information was obtained from the a study of the PCB contamination in the North Fork, South Fork and Mainstem Shenandoah River completed by the State Water Control Board dated August 1989. The second sentence of this statement is vague. To the extent EPA understands the statement, elimination of PCB contamination in the stream is not addressed in remedial action for the site. The Virginia State Water Control Board (SWCB) conducted the sampling investigation which concluded the presence of PCBs in the various media stated above. The SWCB sampling activity included river bank and sediment samples upstream of the Avtex facility. Upstream samples results for PCBs were nondetectable.

d. The computation of 5,000 cubic yard of onsite PCB contaminated soils.

EPA Response: The computation of the PCB contaminated soils is a estimate obtained from the On-Scene Coordinator (OSC).

e. The finding that the Acid Reclamation Facility is extremely unstable and requires dismantling and demolition and that the removal of the facility is required to complete the investigation of contamination remaining at the site.

EPA Response: The acid reclaim facility was determined to be extremely unstable by the OSC upon an onsite consultation with a structural engineer. The OSC's finding is documented in the January 5, 1990, Funding Request which is part of the Administration of 1

Record. It is also supported by a general evaluation performed by the removal technical assistance team (TAT) contractor, Ecology and Environment, Inc. Additionally, a series of structural studies were conducted at the site by the Department of Labor and Industry during the period of 6/12/87 to 8/89. The acid reclaim area was considered to have significant structural problems at that time. Avtex was subsequently ordered to perform corrective action at the plant, including the acid reclaim area. Avtex had begun repairs in the acid reclaim area, however, repairs were not completed due to the closing of the plant.

EPA also believes that the acid reclaim area is a source of ground water contamination. In order to assess subsurface soil and ground water contamination, the building needs to be removed. The work plan submitted by Avtex Fibers, which in part of the Administrative Record, in response to the October 31, 1989, Administrative Order (AO) acknowledges that acid spills be may have percolated down to ground water.

f. The decision to clean the PCB-laden soil to ten parts per million (ppm).

EPA Response: The decision to cleanup to 10 ppm was based upon the application of current EPA guidance which is documented in the Record of Decision (ROD). The levels of 10-25 ppm are risk based levels which the Superfund program has set as protective for industrial areas. A detailed explanation of the rationale for the 10 ppm level is provided in the response to comment A.3.h., and C.1.

g. The computation of the Estimated Costs for EPA's Preferred Alternative.

EPA Response: EPA's cost estimate was initially developed by the removal TAT contractor and revised by the OSC. The OSC cost estimate was modified by the Remedial Project Manager to provide for contingencies. The manner in which EPA's current cost estimate was prepared is to ensure that the appropriate funding would be available to complete the site stabilization measures. In this regard the estimated costs provided are believed to be a conservative upper limit. A large contingency is included for each element of the alternative in the event that any unforeseen circumstances arise. Moreover, the pricing figures for the transportation and treatment/disposal costs for drummed wastes may appear high due to the unknown chemical characteristics and volumes of waste streams. EPA's current cost estimate will be refined as additional information is obtained. The most appropriate, cost-effective treatment/disposal processes will be selected for the drummed wastes once sampling and analysis activities are performed on the waste streams.

h. The extent to which the PCB contaminated soils present a risk to the environment due to their alleged potential to migrate into the storm water conveyance system.

EPA Response: EPA believes that a risk to the environment through the migration of PCB contaminated soils into the sewer system does exist. EPA recognized that the proposed plan stated that PCBs could migrate to the sewer system, but inaccurately specified the particular portion of the system that would be affected. The ROD accurately reflects the correct portion of the sewer system involved and where the sulfate

basin which receives the discharge. As detailed in the ROD, the PCB contaminated soils have the ability to migrate into the sewer system. Levels in PCBs in soil range from 0.3 ppm to 3,365 ppm. Contaminated soils are in the direct pathway of Manhole I which is adjacent to the polypropylene process sewer. The OSC has determined that the potential for continuing releases to the process sewer exists. The process sewer discharges to sulfate basin 4. An assessment of sulfate basin 4 conducted identified the erosion at the toe of the basin's berm by a small stream. The assessment also noted that the combination of an increased pond level in the basin during a heavy rainfall event and a rain-swollen stream eroding the toe of the berm could lead to failure of the basin's containment and release of the its contents to the Shenandoah River.

B. Comments Pertaining to Action for the Drummed Waste

1. A comment was received that a portion of the drums which are targeted in the remedial action are uncontaminated, resalable items which are of value to the estate.

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EPA Response: EPA's knowledge as to what the drums contain is based on outer drum labeling. EPA has done no sampling of these drums to date. Avtex had contracted with Chem Waste Management to perform drum sampling and analysis. EPA contacted Chem Waste Management during removal activities to obtain a copy of the analysis record, however, Chem Waste Management would not release this information. According to Chem Waste Management payment was never received for the activity, therefore results were never provided to Avtex. The remedial action will require sampling of all drums. The ROD has been clarified to indicate that all nonhazardous drums will be left onsite and available for liquidation by the corporate Trustee upon EPA's approval.

C. Comments Pertaining to PCB Contaminated Soils

1. The commentor stated that the choice of 10 parts per million (ppm) cleanup levels in inconsistent with US EPA guidance.

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EPA Response: EPA believes that the 10 ppm soil cleanup level is consistent with the EPA "Guidance for Remedial Actions for Superfund Sites with PCB Contamination." The aforementioned guidance sets forth recommended soil action cleanup levels which range between 10 and 25 ppm for industrial areas. Future land use is a leading consideration in determining cleanup levels. EPA believes the site to be prime industrial area which is confirmed by the numerous inquiries made to the EPA regarding possible future uses of the facility. Environmental considerations were also taken into account in the decision to cleanup to 10 ppm is the environmental concern. The OSC has determined that the PCBs contaminated soils near the loading dock have the potential to migrate into the nearby polypropolyene process sewer which discharges into sulfate basin 4 as further discussed in response A.10.h. above.

2. A commentor noted that there appears to be no appropriate precedent for the 10 ppm cleanup level based upon a search of RODs related to PCB-contaminated soil.

EPA Response: EPA's decision was based on the most current, August 1990, PCB guidance as previously stated and existing site conditions as discussed in the response to comment C.1.

3. The commentor provided a great deal of toxicological data indicating that the need to re-evaluate the mechanism of PCB carcinogenesis in order to establish safe cleanup goals.

EPA Response: EPA appreciates the information provided by the commentor, however, the "Guidance on Remedial Actions for Superfund Sites with PCB Contamination" provide risk based soil action cleanup levels which are based on current EPA risk assessment guidance.

4. A comment was received which indicated that 10 ppm PCB cleanup level was inconsistent with the PCB Cleanup Policy which recommends 25 ppm to 50 ppm cleanup levels.

EPA Response: EPA disagrees with this comment. The difference between the PCB Spill Cleanup Policy and Superfund cleanup levels are due to the use of Superfund standard exposure assumptions and a revised cancer potency factor for PCBs based on recent policy. The August 1990 Superfund PCB guidance specifically states that the soil levels are consistent with the PCB Spill Cleanup Policy.

5. Two comments were received supporting a cleanup level of 25 ppm.

EPA Response: EPA maintains that the 10 ppm cleanup level is justified as the remedial cleanup goal for the rationale set forth in response to comment A.10.h. and C.1.

6. The commentor noted that the Proposed Plan did not appear to consider onsite treatment such as thermal treatment, bio-degradation, vitrification, incineration, solidification and waste stabilization for PCB contaminated soils.

EPA Response: EPA agrees that onsite treatment was not considered for the PCB-contaminated soils. The PCB-contaminated soils present threats to both human health and the environment which is explained in response to comment A.10.h. above. EPA believes that the risks associated with these PCB contaminated soils require an accelerated action. Treatment techniques as do not facilitate accelerated responses due to the time it takes to complete treatability studies, therefore, treatment of soils was not considered a viable alternative to evaluate. Moreover, offsite disposal is relatively less costly.

- 7. The commentor questioned the clarity of the following statement "a more inclusive development of alternatives was not undertaken because of the immediate need to proceed with site stabilization activities" and its relevance to the ultimate remediation of PCB contaminated soil.
 - EPA Response: EPA did not perform a more detailed analysis of alternatives due to the risks to human health and the environment which exist and the amount of time it would take to perform an RI/FS as described in the response to comment A.3. The environmental risks presented by the migration potential and concentrations of PCB contaminated soil is described in the response to comment A.10.h.
- 8. The commentor indicated that proper stabilization of contaminated soils through storm water management might be effective in preventing the migration of PCB contaminated soils.
 - EPA Response: EPA believes that effective storm water management would require a detailed engineering study. In light of the risk and time factor discussed previously, EPA does not believe this would provide a respond to site conditions in a timely manner.
- 9. The commentor believed that EPA should perform an evaluation of interim measures for the cleanup of PCB contamination that includes capping with clean soils.
 - EPA Response: PCB levels in the contaminated soils range up to 3,365 ppm. Due to these high levels a portion of those soils are considered a principal threat by definition in addition to the associated environmental risks explained in response to comment A.10.h. Considering both of these factors, EPA believes an accelerated action is necessary to significantly reduce the risks. Because treatment does not facilitate an accelerated action, EPA has decided that containment of the PCB-contaminated soil to be the appropriate option. EPA considers offsite disposal of the PCB-contaminated soils to be more protective than capping with clean soils due to the existence of principal threat (> 500 ppm) PCB soils.
- D. Comments Pertaining to Site Security, Maintenance, and Health and Safety Measures
 - 1. The commentor indicated that the Proposed Plan incorrectly states that the Trustee has agreed to continue providing site security, maintenance, health and safety for as long as funds remain.
 - EPA Response: At the time the Proposed Plan was published, EPA believed the Trustee to be providing the aforementioned activities at the verbal direction of the On-Scene Coordinator (OSC). Subsequent to the plan being published, EPA issued the Trustee an Administrative Order (AO) to provide these activities. Subject to the availability of money, the Trustee and EPA have reached an agreement regarding site security, maintenance, control and health and safety measures.

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E. Comments Pertaining to Costs

1. The commentor questioned what the actual cost outlay for Alternative 2 would be noting that the present-worth capital cost is \$ 8,708,400 and any other types of operation and maintenance costs involved other than no annual.

EPA Response: The actual cost outlay is estimated at \$ 8,708,400. The proposed plan incorrectly specified the total cost estimate to be present-worth capital costs. EPA has amended all references to the total cost estimate to be capital costs. There are no annual operation and maintenance costs associated with the preferred alternative.

2. The commentor noted that the costs for dismantling and demolition for the acid reclaim facility appears to be excessive.

EPA Response: The manner in which EPA's current cost estimate was prepared is to ensure that appropriate funding would be available to complete the site stabilization measures. In this regard, the cost estimate is believed to be a conservative upper limit. Specifically related to the acid reclaim facility, an allowance was made in the cost estimate for the decontamination of the building structure and equipment, if found to be necessary. Also built into the cost of the activity is a large contingency for any. additional unforeseen circumstances that may occur.

F. Comments Pertaining to Applicable or Relevant and Appropriate Requirements (ARARs)

1. The commentor recounted that actions proposed under Alternative 2 of the Proposed Plan will require compliance with other environmental laws that are determined to be applicable or relevant and appropriate requirements without specifying exactly what the compliance might be and the associated costs and risks.

EPA Response: The Proposed Plan identified applicable or relevant and appropriate requirements (ARARs) in general terms. A detailed list of ARARs for the remedial action are specified in Table 1 (pages 16 and 17) of the ROD. The following response is offered to the extent EPA understands the remainder of the comment. Incorporated in the cost of the alternative 2 would be compliance with identified ARARs. Costs and risks are not individualized for each ARAR.

2. A comment was received that stated that the Proposed Plan identified one ARAR applicable to the proposed PCB cleanup activity which does not justify the 10 part per million (ppm) cleanup criteria.

EPA Response: The ROD identifies a full list of Applicable and Relevant or Appropriate Requirements (ARARs) for the action. The cleanup level of PCBs is based primarily on "Guidance on Remedial Actions for Superfund Sites with PCB Contamination." TSCA requirements are applicable to the disposal of the PCB contaminated soils as was stated in the Proposed Plan. Specifically, 40 CFR Section 761.60 (a)(e) indicates that any non-liquid PCBs at concentrations of 50 ppm or greater

in the form of contaminated soil, rags, or other debris shall be disposed of in a TSCA-approved incinerator or in a TSCA-approved chemical waste landfill. Disposal in an approved chemical waste landfill was chosen for this action. The rationale for the disposal selection and cleanup criteria are discussed separately in this response to comments.

APPENDIX A

PROPOSED PLAN

AVTEX FIBERS SUPERFUND SITE OPERABLE UNIT TWO

AUGUST 1990

U.S. Environmental Protection Agency - Region III Superfund Program

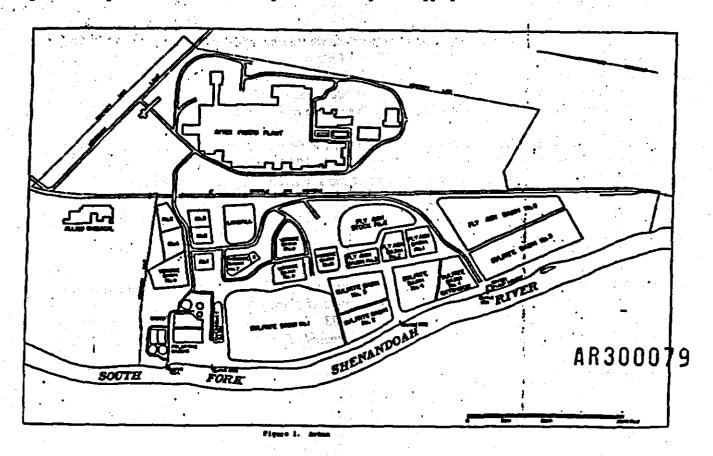
PROPOSED PLAN

Avtex Fibers Site Front Royal, Virginia

August 1990

INTRODUCTION

The U.S. Environmental Protection Agency Region III (EPA) is in the process of conducting removal/remedial activities at the Avtex Fibers Site. From the information generated as part of the EPA Superfund removal and remedial program actions conducted to date a limited number of remedial alternatives were evaluated for drummed wastes, PCB contaminated soils, structures and health and safety. The proposed plan summarizes information collected by EPA's On-Scene Coordinator (OSC), itlentifies the alternative preferred by the EPA and explains the reasons for this preference. In addition, the plan explains how the public may participate in the decision-making process and provides addresses and telephone numbers for the appropriate EPA contacts.



This document is issued by the EPA, the lead agency for site Superfund activities. The EPA, in consultation with the Virginia Department of Waste Management (VA DWM), will select a final remedy only after the public comment period has ended and the comments submitted during this time have been reviewed and considered.

The EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This plan summarizes information that can be found in site-related documents that are available to the public at the local information repository established at:

Samuels Public Library
538 Villa Avenus
Front Royal, Virginia 22630
(703) 635-3153

The EPA and VA DWM invite the public to review the materials available and to comment on the Proposed Plan during the public comment period which begins on August 14, 1990 and ends on September 14, 1990.

The EPA, in consultation with the VA DWM, may modify the preferred alternative or select another response action presented in this plan, based on new information or public comments. Therefore, the public is encouraged to review and comment on the alternatives identified here. The final remedy for the drummed wastes, PCB contaminated soils, acid reclaim building and site control will be selected in a Record of Decision, which shall also be available for review at the local repository.

SITE BACKGROUND

The Aviex Fibers site is a former synthetic fibers manufacturing facility that is located at 1169 Kendrick Lane, in Front Royal, Virginia. Situated along the east bank of the Shenandoah River, the facility occupies approximately 440 acres, 60 of which are under roof, and includes 23 unlined waste disposal structures. In addition to the river, the site is surrounded to the south, east and northwest by residential areas. Approximately 1300 people live within one mile of the site.

Operations at the site began in 1940, when American Viscose first opened a rayon production plant. Subsequently, the site was sold to FMC Corporation in 1963, and to Avtex Fibers, Inc., in 1976. Rayon fibers have been in constant production at the site since its opening. Polyester was manufactured from 1970-1977 and polypropylene production occurred from 1985 until the plant's close on November 11, 1989.

Rayon fiber is manufactured from wood pulp by a series of chemical reactions and physical operations. This process produced a number of wastes that were treated in an on-site wastewater treatment system and/or land disposed. The two major by-products generated through the rayon process were sodium cellulose xanthate-based viscose and zinc hydroxide sludge. The viscose waste was land disposed in eleven unlined basins until 1983 when wastewater treatment of this waste stream was initiated. Waste sludge containing zinc was disposed of in six unlined sulfate basins which cover

approximately 85 acres and drain downhill into an unlined surface impoundment known as the "emergency lagoon". Additionally, there are four unlined fly ash basins on-site and one fly ash stock pile which was used for the disposal of fly ash and boiler house solids generated from operations at the facility.

In 1982, carbon disulfide, a constituent of the viscose waste, was identified in ground water samples from residential wells (Rivermont Acres) located across the Shenandoah River from the Avtex facility. As a result of this discovery, the Virginia State Water Control Board requested that Avtex perform a ground water investigation. In February 1983, Avtex retained Geraghty & Miller, Inc. to perform the required study.

As a result of the initial field investigation, Avtex implemented interim remedial measures in 1983 and 1984 to address the identified contamination. The interim remedial measures included the purchase of 23 Rivermont Acre properties by Avtex whose domestic wells were affected by the ground water contamination. Avtex also initiated a ground water pump and treatment program for purposes of contaminant recovery and containment.

In October 1984, the Avtex Fibers site was proposed for inclusion on the National Priorities List (NPL), a list of hazardous waste sites across the county in need of remedial evaluation and response. In August 1986, Artex Fibers and EPA entered into an Administrative Consent Order to conduct a Remedial Investigation and Feasibility Study (RI/FS). The purpose of this study was to investigate the magnitude and extent of ground water contamination which resulted from the viscose waste disposal. The Consent Order was amended in January 1988 to include FMC Corporation as a respondent. The RI/FS reports were released to the public on August 27, 1988. The principal findings of the first RI/FS were that viscose basins 9, 10, 11 are a source of ground water contamination with respect to the elevated levels of carbon disulfide, hydrogen sulfide, arsenic, cadmium and lead. Based on the findings from the RI/FS, a Record of Decision (ROD) was signed on September 30, 1988, requiring dewatering the viscose basins 9, 10, 11 and pump and treat contaminated ground water. This action is the first operable unit (OU 1) for the site. FMC Corporation and Avtex Fibers were issued an Administrative (unilateral) Order requiring these Potentially Responsible Parties (PRPs) to finance and perform Remedial Design/Remedial Action (RD/RA) to implement the (ROD). Artex subsequently notified EPA of its alleged inability to comply with the order due to the shutdown of operations. FMC will solely perform the RD/RA.

Certain areas within the Artex facility have been contaminated with polychlorinated biphenyls (PCBs) resulting primarily from an explosion of an electrical transformer and from the maintenance practices in the polyester drying area. The presence of PCBs on the Artex site has been confirmed by the Virginia State Water Control Board (SWCB) by its analysis of samples collected on August 28, 1989, and September 1, 1989. PCBs in excess of the Food and Drug Administration (FDA) Tolerance Level of 2.0 parts per million (ppm) were detected in fish tissues collected by the SWCB from the Shenandoah River. The SWCB confirmed the presence of PCBs in river bank soil and sediment samples and on-site soils.

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In September of 1989, the Commonwealth of Virginia requested an evaluation of the facility by the EPA Superfund Removal Program. Upon review, the EPA On-Scene Coordinator (OSC) determined that an imminent threat to the health of the workers at the Avtex facility existed from contact with 008 leads to the environment existed from the

discharge of PCB contaminated wastewater from the sewer system at the plant to the Shenandoah River. The OSC initiated assessment activities which included: oversight of the Avtex initiated PCB cleanup and an evaluation of drums, bulk storage vessels and process lines. On October 31, 1989, EPA issued an Administrative (unilateral) Order which required Avtex to: perform a PCB contamination study and removal; perform waste identification; segregation and disposal of hazardous substances contained in drums and determine the potential for release of hazardous substances associated with site processes, operations and chemical/waste storage areas.

On-going enforcement action by the Commonwealth of Virginia pursuant to state law resulted in revocation of the Avtex Fibers discharge permit on November 10, 1989. Following this action, Avtex ceased operations at the facility. On November 11, 1989, EPA Region III responded under CERCLA, declaring an emergency situation due to the uncontrolled nature of the site resulting from the plant shutdown. The EPA removal action was activated to stabilize the tons of bulk chemicals left unattended on-site. This included carbon disulfide, sulfuric acid, and system acid left at the facility. An integral part of EPA's site stabilization activities included maintaining freeboard in the approximately 120 acres of industrial waste lagoons. If left unattended, these lagoons presented a serious threat of release to the Shenandoah River with subsequent impacts to drinking water intakes downriver.

On February 2, 1990, the Region issued a Administrative (unilateral) Order to FMC Corporation requiring them to maintain freeboard in the sulfate basins by treating the industrial wastewater. On April 30, 1990, FMC took over full operation of the wastewater treatment plant initiated and operated by EPA to maintain freeboard. Treatment of the sulfate basin wastewaters will continue until a final remedial alternative is developed for the wastewater lagoons. This interim measure is needed to protect the Shenandoah River from uncontrolled discharges of hazardous substances pending completion of a forthcoming remedial investigation and feasibility study (RI/FS).

On February 7, 1990, EPA was informed that Artex Fibers Inc. and Artex Fibers-Front Royal, Inc., (collectively "Artex") had filed for bankruptcy under Chapter 11 of the bankruptcy law. The federal bankruptcy judge has appointed a trustee to represent Artex in all matters. The trustee is currently providing site maintenance, health and safety for any Artex employee or visitor, and maintaining site security as ordered by the OSC. The trustee has agreed to continue these activities for as long as his funds remain.

SCOPE AND ROLE OF ACTION

The objective of this Proposed Plan is to present alternatives for addressing discrete problems associated with the site. The problems at the Avtex Fibers Site are complex. As a result, EPA is addressing portions of the site contamination using its emergency response authorities, whereas other portions will be addressed as part of the remedial program.

This action will be the second operable unit (OU 2) of a long-term remediation of all the threats posed to public health and the environment by the Avtex Fibers site. Operable units are discrete actions that comprise an incremental step toward comprehensively addressing site problems. As the Avtex Fibers site evaluation continues and other remedial actions are deemed necessary additional operable units will be defined to facilitate the cleanup.



Pertinent information from removal activities and the associated problems and risks are specified below:

- 2,879 drums of both hazardous and non-hazardous substances are present on-site. Many drums were in poor condition and past releases were evident. As part of EPA's removal action these drums have been secured and staged. Identification, transportation and disposal of these drummed wastes is now required;
- approximately 5000 cubic yards of PCB contaminated soils remain on-site. Previous actions
 by Avtex under the Region's October 31, 1989 order were not completed due to plant closure.
 The PCB contaminated soils present a risk of release to the environment due to their potential
 to migrate into the storm water conveyance system;
- the acid reclamation facility at the manufacturing plant is in extremely poor condition. Poor maintenance and weathering have caused significant corrosion of the building structure and foundation. A structural engineer has declared the facility extremely unstable. Continued degradation through normal weathering could present a safety hazard from collapse. This could affect nearby process buildings where vessels and process lines still contain hazardous substances, thereby causing a release. The facility structure also presents an obstacle to future site work. Without removal of the structures, a comprehensive investigation of contamination remaining at the site cannot be completed;
- Site security, control, maintenance and health and safety are needed to ensure protection of human health and the environment in the event the trustee can no longer perform these activities. Security (human surveillance) is necessary to prevent public access to the site due to the chemical and physical hazards which still exist. Site control will maintain fire protection, in-plant sprinkler systems and site fencing. Site maintenance will address critical systems (electric, water and ventilation) and provide preventative maintenance to facilities where structural deterioration could result in a release of hazardous substances. A site specific health and safety plan will be enforced to assure worker and visitor protection.

SUMMARY OF REMEDIAL ACTION ALTERNATIVES

Using information collected by EPA's On-Scene Coordinator (OSC) EPA has developed the alternatives described below for the currently proposed remedial action at the Artex Fibers site.

ALTERNATIVE 1: NO ACTION

The Superfund Program requires that the "no action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, EPA would not implement any additional measures at this time to protect either human health or the environment from the existing threats at the Avtex site. Under this alternative, EPA would take no further actions in regard to the drummed wastes, PCB contaminated soils, the acid reclaim facility or ensure continued site security, maintenance, control and health and safety. This alternative will not address any human health, environmental or safety risks posed by the site at this time. This alternative also would allow no remediation at the site until completion of a Remedial Investigation/Feasibility Study (RI/FS) report.

ALTERNATIVE 2: COMPLETION OF SITE STABILIZATION ACTIVITIES

Under this alternative, the appropriate actions would be taken at the Avtex Fibers site to prevent: the threat of release of hazardous substances from the drums, the migration of hazardous substances from contaminated soils, releases of hazardous substances which would occur as result of building degradation. Also included as part of this alternative is site security, maintenance, control and a site specific health and safety plan in the event that the trustee can no longer provide these activities.

Under this alternative, the following actions would occur:

- Identification, transportation and disposal of the 2,879 drums currently on-site. Upon identification of drum contents, liquid wastes will be treated at an appropriate off-site treatment facility. Drums may be decontaminated, crushed and disposed in a non-hazardous waste landfill.
- Excavation, transportation and disposal of the estimated 5000 cubic yards of PCB contaminated soils to an off-site approved chemical waste landfill. Soils contaminated with PCBs in excess of 10 parts per million will be excavated for disposal.
- Dismantling and demolition of the unstable acid reclaim facility. Both the building and equipment within the building will be decontaminated, if necessary, using best management practices. Decontaminated usable equipment from within the building may be sold by the trustee. Other facility components may be sold as scrap, recycled or left on-site. Decontaminated building rubble and debris will be left on-site.
- * Continued site security, control, maintenance and health and safety to ensure protection of human health and the environment.

Actions proposed under this alternative will require compliance with other environmental laws that are determined to be applicable or relevant and appropriate requirements (ARARs). Specifically, the disposal of PCB contaminated soils will require compliance with the Toxic Substances Control Act (TSCA). Depending on the contents of drummed wastes the Resource Conservation and Recovery Act (RCRA) may be an ARAR. RCRA may also be an ARAR for the rubble and debris left on-site as a result of the acid reclaim building dismantling and demolition.

This phase of the Avtex Fibers site response action is an operable unit in the overall site remediation to control immediate hazards at the site in a timely manner as well as contribute to the efficient performance of the long-term remedial action. The estimated present-worth capital cost of this alternative is \$ 8,708,400. There are no annual operation and maintenance costs associated with this alternative. This alternative could be completely implemented within one (1) year.

No additional alternatives were considered at this time. A more comprehensive review was not performed due the immediate need to proceed with site stabilization activities.

EVALUATION OF ALTERNATIVES

EPA's preferred alternative for addressing contamination at the Avtex Fibers site is Alternative 2-Completion of Site Stabilization Activities. Both alternatives were evaluated using the following nine criteria:

- 1. Overall Protection. The preferred alternative would eliminate the threat of release of hazardous substances in drums, significantly reduce the potential migration of PCBs into the environment, significantly reduce the potential of direct contact with the chemical and physical hazardous that still exist on-site through site security, control, etc., and significantly reduce the safety hazard and threat of a release due to structural instability of the acid reclaim facility in a timely manner. Alternative 1 would not reduce any site risks at this time.
- 2. Compliance with ARARs. The preferred alternative will meet RCRA ARARs for drummed wastes and building rubble. TSCA ARARs will be meet for PCB contaminated soils.
- 3. Long Term Effectiveness and Permanence. Under Alternative 2, drummed wastes and PCB contaminated soils would be removed leaving no residual risk from these areas that would threaten the effectiveness over time. Alternative 1 would afford the lowest degree of long-term effectiveness and permanence.
- 4. Reduction of Taxicity, Mobility, or Volume through Treatment. The preferred alternative may reduce the volume of drummed wastes through the use of treatment. Alternative 1 would provide no reduction of taxicity, mobility or volume of contaminants.
- 5. Short-term Effectiveness. Proper safety measures would be required to protect on-site workers and the local community during excavation and dismantling activities. Risks posed to the local community through off-site transportation of wastes are minimal.
- 6. Implementability. The preferred alternative would require structure dismantling and possible construction of a decontamination pad which are common practices. If decontamination of structures is necessary, decontaminated materials will be tested to verify that they are clean. The availability of off-site landfills for hazardous materials is an important consideration for this alternative and has been determined to be available for the PCB contaminated soils. Special services or technology is not required for Alternative 1.
- 7. Costs. The estimated cost of the preferred alternative is \$8,708,400.
- 8. State Acceptance. EPA supports the selection of Alternative 2. The Commonwealth of Virginia is still considering EPA's perferred alternative.
- 9. Community Acceptance. Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the Record of Decision.

In summary, the preferred alternative is believed to provide the best balance of trade-offs among the alternatives evaluated with respect to the criteria evaluated above. Based on the information available at this time, EPA and the Commonwealth of Virginia believe the preferred alternative would protect human health and the environment, would comply with ARARs and be cost-effective. In addition, permanent solutions, alternate treatment technologies or resource recovery technologies will be utilized to the maximum extent practicable.

NEXT STEPS

EPA relies on public input to assure that the remedy selected for each Superfund site meets the need and concerns of the local community. Therefore, a public comment period will be held from August 14, 1990 to September 14, 1990 to allow the public to review this Proposed Plan and to comment or express concerns to EPA regarding the plan and the preferred alternative. All comments received during the public comment period will be considered and addressed by the EPA. The current Preferred Alternative is preliminary and may change upon review of comments submitted. These comments and the Agency's responses will be documented in a Responsiveness Summary that will become part of the Record of Decision (ROD) for the Avtex Fibers Site. The Record of Decision will document the selected remedy for the drummed wastes, PCB contaminated soils, acid reclaim facility and site safety/control and maintenance. The ROD is expected to be signed in the fall of 1990. A copy of the ROD will be placed in the Samuels Public Library.

PUBLIC PARTICIPATION

The public comment period is designed to provide local residents and others an opportunity to become involved in the decision-making process regarding the remedial activities that will occur in their community. It is important to note that although EPA has proposed a preferred alternative, no final decision has been made and all comments will be considered. The public is encourage to review the site-related documents, which are available at the local information repository at the Samuels Public Library.

EPA will hold a public meeting at 7:00 p.m., August 22, 1990, at the Front Royal Youth Center, 201 East 8th Street, Front Royal, Virginia to discuss the remedial alternatives and the proposed remedy for drummed wastes, PCB contaminated soils, acid reclaim facility and site security, control, maintenance and health and safety at the Avtex Fibers Site. Interested citizens also will be provided with an opportunity to ask questions and provide comments.

The public meeting will take place during the 30-day public comment period on the Proposed Plan. The public comment period begins on August 14, 1990 and ends on September 14, 1990. Citizens are encouraged to review site-related documents and submit written comments to one of the following people:

Ms. Bonnie Guy Gross (3HW24)
Remedial Project Manager
U.S. Environmental Protection Agency
841 Chestnut Street
Philadelphia, PA 19107

Mr. William Toffel (3EA21)
Community Relations Coordinator
U.S. Environmental Protection Agency
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-6180

All comments must be submitted to one of the above-listed people and postmarked on or before September 14, 1990.

APPENDIX B

PUBLIC MEETING ATTENDANCE SHEET AUGUST 22, 1990

COMMUNITY RELATIONS COORDINATOR	_ DATE:	7	#21	
Avtex		8	1221	90

US ENVIRONMENTAL PROTECTION AGENCY

PLEASE SIGN IN SO THAT WE CAN ADD YOUR NAME TO OUR MAILING LIST ABOUT THIS SITE IF YOU DO NOT WISH TO RECEIVE INFORMATION FROM US. PLEASE SIMPLY INDICATE YOUR ATTENDANCE WITH YOUR INITIALS. PLEASE PRINT

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